REMARKS/ARGUMENTS

Applicants wish to direct attention to the Appendix, which indicates the correct Power of Attorney information as well as the correct Correspondence Address for this case. It is to be noted that the Attorney Docket number under which this case is currently docketed at Applicants' attorney is "MR1035-1502". Copies of the new Power of Attorney and Correspondence Address change papers recently filed in this case are attached to avoid confusion and to ensure correct transmission of correspondence from the USPTO to the undersigned Attorney.

This case has been carefully reviewed and analyzed in view of the outstanding Office Action dated 21 December 2004. Responsive to the objections and rejections made by the Examiner, Claims 22 and 25 have been amended and are now clearer in their respective recitations. Claim 35 has been appended for prosecution. Claims 1-8, 22-28 and 35 will be pending in this Application upon entry of the Amendment filed herewith.

In the Official Action, the Examiner noted that Claims 9-11 and 29-34 belong to non-elected Species and are therefore considered non-elected Claims. Applicant acknowledges and has labeled the subject Claims as withdrawn from consideration in the present listing of Claims.

Applicant acknowledges with appreciation that the Examiner has allowed Claims 1-8.

The Examiner has objected to Claim 25 as being dependent on a rejected base Claim, and stated the Claim would be allowable if rewritten in independent form to include the subject matter of the base Claim and any intervening Claims. Newly appended Claim 35 recites, in independent Claim form, the subject matter of Claim 25 and, as such, includes the subject matter of Claims 22 and 23. It is respectfully submitted that Claim 35 is in condition for allowance.

In the Official Action, the Examiner rejected Claims 22-24 and 26-28 under 35 U.S.C. §103(a) as being unpatentable over Haskell, et al. (US Patent #6,233,356; hereinafter Haskell) in view of Henry (US Patent #5,436,664). In setting forth the rejections, the Examiner observed that Haskell discloses a video bitstream that includes intra-coded and predictive-coded video frames, wherein the bitstream includes a plurality of first packets that carry I-VOPs and P-VOPs. The Examiner further observed that Haskell does not disclose a plurality of second packets to carry at least one redundant motion vector corresponding to a P-VOP in the video bitstream. The Examiner relied on Henry for such disclosure and concluded that it would have been obvious to an ordinarily skilled artisan to combine the video bitstream as implemented by Haskell with the conventional concept as taught by Henry so that the plurality of second packets carries at least one redundant motion vector corresponding to the P-VOP in the video bitstream in order to replace a missing block with the portion of picture from which the video was obtained.

As newly amended Claim 22 more clearly recites, Applicants' encoding of

a video bitstream carrying intra-coded frames (I-frames) and predictive-coded

frames (P-frames) includes a plurality of first packets for carrying intra-coded

video object planes (I-VOPs) and predictive-coded video object planes (P-VOPs).

Applicants' encoded bitstream further includes a plurality of second packets by

which "a second packet carries at least one redundant motion vector corresponding

to a P-VOP in the video bitstream". Among the beneficial features of the

invention of the subject Patent Application is that "the redundant motion vector

[is] coded from a second reference frame removed from a first reference frame

from which a standard motion vector is coded", where "the second packet

includ[es] an indication of the second reference frame". Thus, motion vector

information can be located for a P-VOP when the packet containing the standard

motion vector data for that P-VOP has been dropped or is otherwise missing or

corrupted. Moreover, conveying the redundant motion vectors in second packets,

such as the user data packets provided for by the MPEG-4 standard, allows

selective use thereof so as to be backward-compatible to systems based on

previous video standards.

Whereas, the Henry system discusses the utilization of redundant motion

vectors, the data and redundant motion vectors thereof must be sequentially

transmitted. Alternatively, motion vectors for blocks are shifted by a

predetermined number of blocks so as to ensure that a block and its associated

motion vector are transmitted in separate packets. Thus, a decoding system must be modified to correctly associate a motion vector with the block from which it was encoded. If the decoding system is not aware of the shift in the number of blocks between a motion vector and the block to which it belongs, as would be the case in a standard MPEG decoder, catastrophic errors in decoding the video sequence would be inevitable.

As mentioned above, and as is fully discussed in the subject Patent Application, Applicants' invention is backward-compatible to prior video systems in that redundant motion vectors are carried in second packets and each "redundant motion vector [is] coded from a second reference frame removed from a first reference frame from which a standard motion vector is coded", and "the second packet includ[es] an indication of the second reference frame". Thus, the video data carried in a plurality of first packets "that carry video object planes (VOPs), where the plurality of first packets include packets for intra-coded VOPs (I-VOPs) and packets for predictive-coded VOPs (P-VOPs)" may be used in conventional systems in the manner provided for by prior video decoding standards, such as MPEG-2. When a video decoding system is extended to use secondary packets, such as the user data packets of MPEG-4 compliant systems, it may take advantage of the redundant motion vectors carried therein. Additionally, as "the second packet includ[es] an indication of the second reference frame", a

system need not be modified to associate a motion vector to a block which has been delayed by a predetermined number of blocks.

It is believed that the combination of method steps recited in Claim 22 is unique and non-obvious over Haskell, Henry and the combination thereof. Neither reference, nor the combination of references, discloses or suggests the limitations of the amended Claims, such as that of a second packet carrying a "redundant motion vector coded from a second reference frame removed from a first reference frame from which a standard motion vector is coded, the second packet including an indication of the second reference frame". As neither the references cited by the Examiner nor the combination of references shows all of the claimed limitations in the unique combination for the purposes of encoding redundant motion vectors in video data bitstreams, the references cannot anticipate or make obvious the invention so claimed.

The remaining Patent cited by the Examiner but not used in the rejections has been reviewed, but is believed to be further remote from the subject matter than the references used by the Examiner when patentable considerations are taken into account.

In view of the foregoing amendments and remarks, Applicant believes that

the subject Patent Application is in condition for allowance and such action is

respectfully requested.

Respectfully submitted,
For: ROSENBERG, KLEIN & LEE
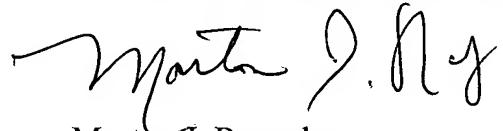
Morton J. Rosenberg
Registration #26,049

Dated: 3/21/05

Appendix 1/2

COPY

MR1035-1502

IVI-US-2003-0034a-INTV.014A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Chang-Su Kim, et al. :

Serial No. : 10/092,373 : Art Unit: 2613

Filed : 5-Mar-02 : Examiner: S. S. An

Title : SYSTEMS AND METHODS FOR ENCODING REDUNDANT MOTION
VECTORS IN COMPRESSED VIDEO BIT STREAMS

REVOCATION OF POWER OF ATTORNEY AND
APPOINTMENT OF POWER OF ATTORNEY

The owner of the above-identified U.S. Patent Application, hereby revokes all Powers of

Attorney previously given and hereby appoints the following Attorneys to transact all business in

the U.S. Patent and Trademark Office connected therewith:

> Morton J. Rosenberg, Esq., Reg. #26,049
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Respectfully submitted,

2004/6/16

_____   _____
Date   FOR: INTERVIDEO, INC.
                                 Title: Director of R&D

Assignment recorded on
Reel 12957/Frame 345

APPENDIX 2/2

COPY

CHANGE OF CORRESPONDENCE ADDRESS
Application

Address to:
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Alexandria, VA 22313-1450.

MAR 21 2005
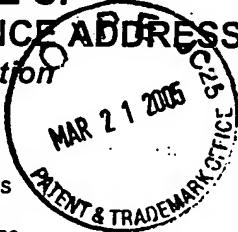
Application Number	10/092,373
Filing Date	5 March 2002
First Named Inventor	Chang-Su Kim, et al.
Art Unit	2613
Examiner Name	S. S. An
Attorney Docket Number	MR1035-1502

Please change the Correspondence Address for the above-identified patent application to:

[✔] Customer Number : 04586

OR

[ ] Firm or Individual Name	Rosenberg, Klein & Lee				
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I am the:

[ ] Applicant/Inventor

[ ] Assignee of record of the entire interest.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).

[✔] Attorney or Agent of record. Registration Number 26,049

[ ] Registered practitioner named in the application transmittal letter in an application without an executed oath or declaration. See 37 CFR 1.33(a)(1). Registration Number_____

Typed or Printed Name	Morton J. Rosenberg
Signature	
Date	6-24-04	Telephone 410-465-6678
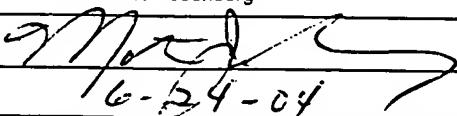
NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required. see below*.

[ ] *Total of _____forms are submitted.